

THE OBSERVER



Centaurus A
APOD March 9, 2017, Credit & Copyright Fabian Neyer

From the Desk of the President by Tom Mozdzen

Our auction and sale was a great success as many pieces of equipment and books found new homes. The only large items not sold were Gerry's 10" and 14" reflectors along with a heavy duty pier mount with an electric clock drive. Contact David Hatch if you are interested in these items. Many thanks to our volunteers who classified, stored, transported, and setup for display the many items that went on sale. Our speaker, Dennis Zaritsky, capped off the evening with an informative talk about detecting and classifying the hydrogen gas in galaxies.

Constitution and Bylaws on the EVAC web site on May 1st followed by an announcement to the evac-announce mailing list. The reason for the revision is to more clearly state the intentions of the original document and to more accurately reflect what we are doing today. For example, we deleted the section about the club maintaining a library. We also extracted items that are more variable, like speaker honorariums or annual club dues, and put them into a Policy and Procedures document that can be more easily updated by simple action of the Board of Directors. Please send us any questions you may have via email or or you may save your questions for

We will post a revised version of our

UPCOMING EVENTS:

- EVAC Star Party - May 7*
 - Public Star Party - May 13*
 - EVAC Star Party - May 14*
 - EVAC Monthly Meeting - May 19*
- Check out all of the upcoming club events in the Calendars on page 11.*

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From the Desk of the President

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the May meeting. We intend to vote on the revised document at the June meeting.

It is not too early to start planning for the Grand Canyon Star Party, held from June 9th -16th at both the north and south rims. You can find more information here: [GCSP](#).

Also in June (14-16th) is the Symposium on Telescope Science sponsored by the Society for Astronomical Sciences (SAS). Tom Polakis, Woody Sims, and Wayne Thomas will present the science they are doing with their telescopes. An article in the newsletter explains this conference in more detail.

Science with Small Telescopes

by Robert Buchheim

In 21st century astronomy, it may be surprising that there is still an important role for data gathered by non-professional researchers using backyard-scale telescopes. That is, people like us, with equipment like ours.

The giant professional telescopes are designed to study faint targets, their detectors cannot handle objects that are too bright, their observing time is oversubscribed, and therefore many worthy targets go unstudied. The small-telescope community has several special capabilities: (a) There are a great many small telescopes and capable observers, which makes it feasible to examine targets that can't be fit into the schedule of the giant telescopes. (b) Relatively bright targets (say, brighter than about 10th magnitude) can only be monitored with smaller instruments. (c) Privately-owned telescopes are not constrained by "time allocation committees" – we can spend as much time as we want, observing anything that seems intriguing. (d) Small telescopes can be devoted to targets and phenomena that demand a lot of observing time. Determining the time of minimum light of an eclipsing binary system will use an entire night. Determination of an asteroid's rotational lightcurve will probably take a half-dozen all-night observing sessions. Monitoring a nova or other variable star might take a few

Finally, let's not overlook the May meeting. Our very distinguished featured speaker will be professor [Jim Bell](#) from ASU who is also the current president of the Planetary Society. He asked if we would be interested in a talk about Voyager 1 instead of the usual Mars rover instrument talk, and we enthusiastically said yes. We can always invite him back for the Mars talk, but it is not everyday that you get to hear a fresh talk about Voyager 1.

Until next month,

Tom Mozdzen

hours every night for a month. Such tasks are difficult to fit into a large professional observatory's schedule, but the researchers do need – and value – observations like these that are fairly straightforward to make from our backyards, using visual observations, DSLR images, CCD images, and low-resolution spectrographs.

The annual Symposium of the Society for Astronomical Sciences is the premier gathering of the small-telescope research community, where amateur and professional astronomers come together to share results, learn the techniques, discuss projects and instruments, and enjoy each other's company. This year the Symposium will be a joint meeting with the Association of Lunar and Planetary Observers. It will be held in Ontario, California, on June 14-15-16, 2018.

For more information, see the SAS website (www.SocAstroSci.org). Registration information is on the Symposium tab. The agenda of activities is in the current Newsletter (which you can download from the SAS website). The Proceedings and videos from recent years are also freely available. Everyone with an interest in small-telescope science is welcome.

The Backyard Astronomer

by Bill Dellinges (May 2018)

May's Must See T.V. (Telescope Viewing)

In my humble opinion, here are the top ten telescopic targets for May. Your mission, should you accept it, is to observe the following 10 objects. This list will self-destruct in ten seconds.

Jupiter: The big daddy of the planets is back, look for it low in the eastern sky about 8-9 pm. Opposition is on May 8th, meaning the gas giant will be up all night. At magnitude -2.5, only Venus will outshine it. Jupiter begins the month at a distance of 410 million miles and exhibits an angular diameter of 44.7 arc seconds.

M-5 (Serpens Caput): A wonderful globular star cluster second only to M-13 in Hercules and M-22 in Sagittarius. Less than half a degree southeast of M-5 is 5 Serpentis, a nice double star with a faint 10th magnitude companion (AB Mag 5.1, 10.1, Sep 11.4", Position angle 360). SAO 120946. M-5 is 24,500 light years (LY) away.

M-13 (Hercules): The finest globular in northern skies until M-22 in Sagittarius rises. Try using 100x to 200x to enhance the star count and contrast with globular star clusters. Distance 23,000 LY.

M-44 (Beehive Cluster in Cancer): Visible to the naked eye in a dark sky, this is the fifth closest star cluster after the Ursa Major Group, Hyades (Taurus' Head), Coma Berenices Cluster (Mel 111) and the Pleiades. The Beehive is a thing of beauty. Best seen with binoculars, 15x or 16x70's with a four-degree field would be perfect. Distance 592 LY.

M-65/66 (Leo): These two fairly bright galaxies can fit in an 8" SCT low power field. If your sky is dark, you may also spot a third galaxy, NGC 3628, in the same field. The group is 30 million LY away.

M-82 (Ursa Major): Even small telescopes hint at disruption in the morphology of this somewhat bright edge-on galaxy. The "Cigar Galaxy" is "only" 12 million LY distant and is thought to be going through a period of intense star formation from a close encounter with nearby M-81.

NGC 3242 (Hydra): The "Ghost of Jupiter" is one of finest planetary nebulae in the sky. Very round and bright. Ghostly – it just kind of stares at you. Distance 2,600 LY.

Algieba (Leo): Gamma Leonis is a showcase double star 130 LY away. Its two yellow suns are separated by 4.7". Their actual separation is thought to be 125 astronomical units with a period of revolution of about 600 years. It takes about 100x to split the pair cleanly. AB 2.4, 3.5, 4.7", 120o. SAO 81298.

Mizar (Ursa Major): At the bend in the Big Dipper's handle lies this popular and historically noted double star. Keen eyesight reveals a 4th magnitude star, Alcor, only 11.8' away from Mizar. In Arabic astronomy they were referred to as the Horse and Rider. In Japanese mythology, those who could not see both stars, would die that year. There is some disagreement as to whether Mizar and Alcor are related gravitationally. Their distance and proper motion are similar. But the distance between them is huge (17,800 AU's). Astronomer Jim Kaler estimates that if bound by gravity, their period would be about 750,000 years. Mizar A, B, and Alcor each have spectroscopic companions, thus might represent a six-star multiple star system (if Alcor is included). Mizar AB can be resolved in a 70mm telescope at 26x. Distance 86 light years. AB 2.2, 3.9, 14.4", 150o. SAO 28737. Mizar AB's actual separation is 316 AU's with a period of 5,000 years.

"Stargate" (Multiple star system in Corvus): This is an intriguing object. EVAC members call it Farley's Triangle after a member stumbled upon it. It's a well-known asterism too because Struve 1659 shows a triangle of stars within a triangle of stars - quite unique. It's about one degree southwest of M-104. Too bad one of the inner triangle stars is a tad faint (mag 11), so the smaller inner triangle isn't as conspicuous as the outer one in small telescopes. Nevertheless, even in an 8" scope, the public always finds it a hoot. You might too! Distance 170 LY. SAO 157379. [RA12h35.7m DEC-12°02' if needed].

MISSION ACCOMPLISHED.

Let's Party for May

Astronomical objects for public (and private) star parties, arranged by type.

by *Fulton Wright, Jr. Prescott Astronomy Club*

Flashy, deep-sky objects, visible in the middle of the month, at the end of astronomical twilight, 7:10 PM this month, (when it really gets dark). This list customized for Prescott, Arizona, should work well anywhere in the state, and be usable anywhere in the old 48 states.

Double Stars (2 or 3 stars, close together)

*name: Alpha Gemini (bright)
--alt name: Castor, SAO 60198
--magnitudes: 1.6 & 3.0
--separation: 5 arc-seconds
--R.A.: 7hr 35min
--Dec.: +31deg 53'

*name: Gamma Leonis
--alt name: Algiba, SAO 81298
--magnitudes: 2.2 & 3.6
--separation: 5 arc-seconds
--R.A.: 10hr 20min
--Dec.: +19deg 51'

*name: Gamma Virginis
--alt name: Porimma, SAO 138917
--magnitudes: 3.5 & 3.5
--separation: 3 arc-seconds
--R.A.: 12hr 42min
--Dec.: -1deg 27'

Open Clusters (about 50 bright stars) (not a great season for open clusters)

*name: M 44 (binocular object)
--alt name: Beehive Cluster, Praesepe, NGC 2632
--magnitude: 3.1
--size: 70 arc-minutes
--R.A.: 8hr 40min
--Dec.: +19deg 40'

*Name: M 48
--alt name: NGC 2548
--magnitude: 5.8
--size: 30 arc-minutes
--R.A.: 8hr 14min
--Dec.: -5deg 45'

*Name: M 67
--alt name: NGC 2682
--magnitude: 6.9
--size: 25 arc-minutes
--R.A.: 8hrs 51min
--Dec.: 11deg 48'

Globular Clusters (about 200,000 dim stars) (this is not a good season for globulars.)

*name: M 3 (low but rising)
--alt name: NGC 5272
--magnitude: 6.2
--size: 18 arc-minutes
--R.A.: 13hrs 42min
--Dec.: +28deg 23'

*name: M 53
--alt name: NGC 5024
--magnitude: 7.6
--size: 13 arc-minutes
--R.A.: 13hr 13min
--Dec.: +18deg 10'

*name: M 13
--alt name: Hercules Cluster, NGC 6205
--magnitude: 5.8
--size: 20 arc-minutes
--R.A.: 16hrs 42min
--Dec.: +36deg 28'

Galaxies (about 200,000,000 very dim and distant stars)

*name: M 82 and M 81
--alt name: Bode's nebula, NGC 3031 and NGC 3034
--magnitudes: 6.8 and 8.1
--size: 21 x 11, 11 x 5 arc-minutes, 37 arc-minutes apart
--R.A.: 9hrs 55min
--Dec.: +69deg 23'

*name: M 51
--alt name: Whirlpool Galaxy, NGC 5194
--magnitude: 8.0
--size: 14 x 12 arc-minutes
--R.A.: 13hr 30min
--Dec.: +47deg 12'

Let's Party for May

Continued from page 4

Galaxies (about 200,000,000 very dim and distant stars)

*name: M 65, M 66, NGC 3628 (trio of galaxies)

--alt name: NGC 3623, NGC 3627, ----

--magnitudes: 9.2, 9.0, 9.2

--sizes: 8 x 2, 10 x 5, 11 x 3 arc-minutes

--(in a field of 40 arc-minutes)

--R.A.: 11hr 20min

--Dec.: +13deg 20'

*name: M 104

--alt name: NGC 4594

--magnitude: 8.2

--size: 8 arc-minutes

--R.A.: 12hrs 40min

--Dec.: -11deg 37'

Diffuse Nebulae (gas and dust lit by a nearby star)

(It is a very bad season for nebulae.)

None available

Planetary Nebulae (gas shell from exploding star, looks like Uranus in telescope)

*name: NGC 3242

--alt name: Ghost of Jupiter Nebula, Caldwell 59

--magnitude: 7.3

--size: 0.7 arc-minutes

--R.A.: 10hr 25min

--Dec.: -18deg 39'

*name: NGC 2392

--alt name: Eskimo Nebula

--magnitude: 9.2

--size: 0.8 arc-minutes

--R.A.: 7hrs 29min

--Dec.: +20deg 55'

*name: NGC 6543

--alt name: Cat's Eye Nebula, Caldwell 6

--magnitude: 8.1

--size: 0.4 arc-minutes

--R.A.: 17hrs 59min

Fountain Hills Dark Sky Event

by Jennings Bassist

I attended the Dark Sky Fountain Hills event that took place on a very nice patio with about 10 to 15 telescopes set up. Throughout the evening, the lines were 10 to 15 people deep at each telescope and people really enjoyed the views. The lectures in the auditorium were very well attended and every time the speaker changed, a new crowd would come out and look through the telescopes. Ted did an excellent laser guided tour of the night sky and the crowd really enjoyed it.

After all the speakers finished, several telescopes remained to view Jupiter. We had a great time. The organizers of the event came around to each person and thanked them for bringing their telescopes out. Several astronomy clubs from the Phoenix area were represented. There were also beer gardens and several vending trucks for food. The organizers of the Fountain Hills event hope to sponsor this event at least once a year if not more often.

EVAC General Meeting Notes for April 2018

by Rob Baldwin

The special auction and sale of donated equipment took place at 6:30 pm and ended around 8:00 pm. Many of the 50+ attendees took home telescopes, eyepieces, and some amazing books for amazing prices.

Dr. Zaritsky's talk focused on his efforts to determine the amount of matter in the Universe. While astronomers are familiar with dark matter, the unknown material that is the dominant type of matter in the Universe, it turns

out that we can't even track down most of the normal matter in the Universe. Dr. Zaritsky discussed the quest to account for all of the normal matter in the Universe. His presentation covered how we can know how much normal matter there should be, how we concluded that we hadn't found it all, and the recent work his group has done to try to track it down. This fascinating presentation included many recently discovered facts about the composition and behavior of galaxy structures.

Find Out What's Happening – Join EVAC-Announce List

If you would like to receive email announcements about EVAC meetings and activities please join the EVAC–Announce mailing list. Click on the link below to subscribe. Enter your full email address in the box titled User Options and press OK. You will receive a confirmation email. Your privacy is respected by EVAC and we will never sell your email address, or use it for non-club relevant solicitations. This mailing list is designed for communication from EVAC, and does not enable users to respond to the message. If you wish to contact club officers, please use the list on the Contact-Us tab. To subscribe to the EVAC – Announce mail group click: <http://www.freelists.org/list/evac-announce>. To unsubscribe use the same link, enter your email address and select Unsubscribe from the “Choose An Action” list. Another list that may be of interest is AZ-Observering. To subscribe click <http://www.freelists.org/list/az-observing>.

Looking for that perfect weekend activity?

Why not resolve to getting involved?

Contact Claude Haynes to join the staff at GRCO

Email: grco@evaconline.org

Classified Ads

For Sale: Celestron Advanced VX equatorial mountm excellent condition. Rarely used. Asking \$550.

Celestron StarSense AutoAlign system. Excellent condition. Like new. Asking \$200.

I am changing my observing setup so I am looking for a good home for this excellent equipment.

Email me for additional information.

Steve Platte: upuaut99@hotmail.com



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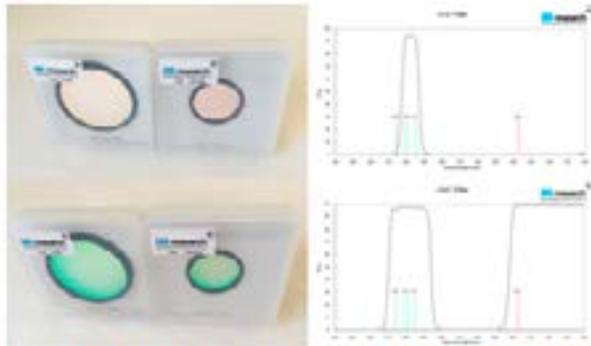
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Classified Ads

I am selling my CGEM mount and moving to another mount.

The CGEM was purchased from OPT 2011 and was Hypertuned by Deep Space Products 2012. The RA Worm Bearings were upgraded as part of the Hypertune Service. The mount comes with an extra 17 pound counterweight and Aluminum Tripod leg Spreader. The mount was upgraded with ADM hardware - below. Overall the mount is in very good condition. I know of no issues with the mount.

Package Includes and My Costs

- Celestron CGEM Mount /w Weight and HC \$1,299
- Hypertune Service \$375
- Aluminum Tripod Leg Spreader \$235
- Extra Long RA Weight Shaft \$50
- Extra 17 Pound Counterweight \$85
- Celestron Anti-vibration Suppression Pads \$24
- ADM Dual CGEM NOK Saddle \$135
- ADM ALT CGEM Knob \$40
- ADM AZ CGEM Knobs \$35
- ADM CGEM Tripod Knobs \$50
- ADM CGEM Clutch Levers \$50
- ADM CGEM Polar Scope Plug \$10
- 24" Extension Cable for Hand Controller \$10
- 12 VDC Power Cord n/c

Cost of the above \$2,598

More pictures can be found here - <https://www.cloudynights.com/gallery/album/9228-cgem/>

Asking \$900 OBO, bank check or cash. Pickup only, Phoenix, AZ. I will drive up to 2 hours to deliver the mount.

Jim Waters

jimwaters@cox.net



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Upcoming Meeting

May 18

June 15

July 20

August 17

September 21

October 19

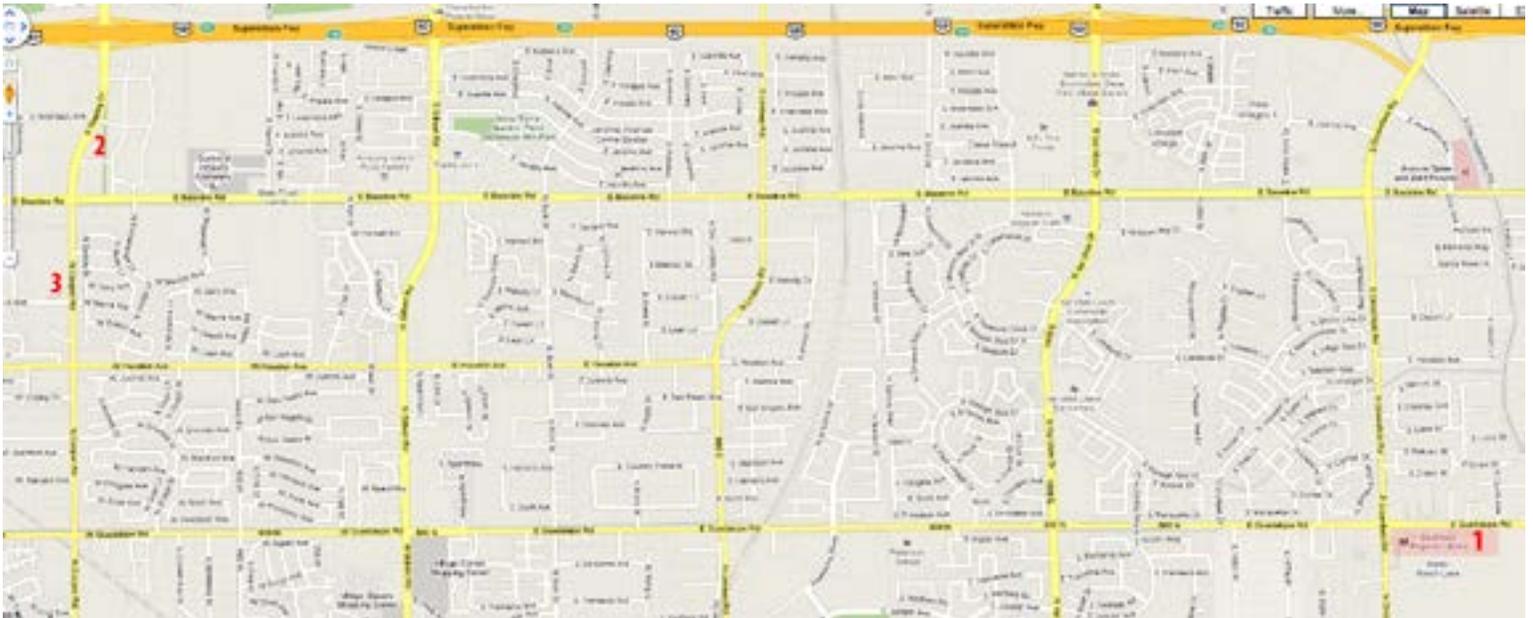
November 16

December 21

The monthly general meeting is your chance to find out what other club members are up to, learn about upcoming club events and listen to presentations by professional and well-known amateur astronomers.

Our meetings are held on the third Friday of each month at the Southeast Regional Library in Gilbert. The library is located at 775 N. Greenfield Road; on the southeast corner of Greenfield and Guadalupe Roads. Meetings begin at 7:30 pm.

Visitors are always welcome!



1 Southeast Regional Library
775 N. Greenfield Road
Gilbert, Az. 85234



MAY 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

May 5 - EVAC Star Party

May 12 - EVAC Star Party

May 9 - Rudy Bolonga Elementary

May 18 - EVAC Monthly Meeting

May 11 - Public Star Party

JUNE 2018

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	28	25	26	27	28	29

June 8 - Public Star Party

June 15 - EVAC Monthly Meeting

June 9 - EVAC Star Party

June 16 - EVAC Star Party

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www.evaonline.org

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East Valley Astronomy Club

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LAST QUARTER MOON ON MAY 7 AT 22:09

NEW MOON ON MAY 15 AT 07:48

FIRST QUARTER MOON ON MAY 21 AT 23:49

FULL MOON ON MAY 29 AT 10:19